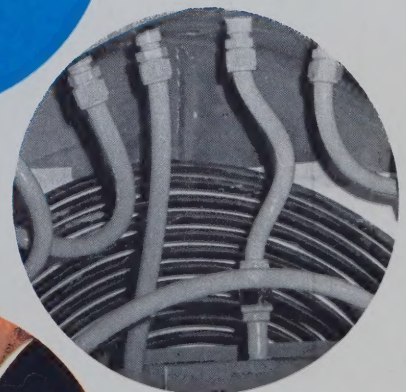


*Lee*

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# Highlighting Carborundum's 1964 Annual Report



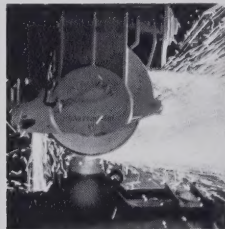
## 1. SUMMARY OF OPERATIONS

Sales reached historic high of \$184,600,000; net income rose to record of \$11,200,000 or \$6.19 per share; dividend rate increased 11%; loans of \$7,800,000 repaid.



## 2. ACQUISITIONS AND NEW FACILITIES

Over \$11,000,000 expended for expansion and modernization of present facilities and the facilities of newly purchased companies; commitments made for further acquisitions.



## 3. TECHNICAL AND MARKETING DEVELOPMENTS

Carborundum's new abrasive systems accorded enthusiastic reception; new abrasive systems centers established; multiple products supplied for multiple markets; advanced refractory materials received strong acceptance; silicon carbide fibers made commercially available; Company and subsidiary cited in national research competition for two new developments.



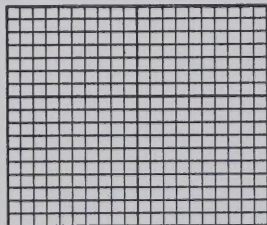
## 4. INTERNATIONAL

Foreign subsidiaries showed gains; German subsidiary changed 1963 loss to 1964 profit; Company and a subsidiary cited for excellence in export from United States; associated companies set records.



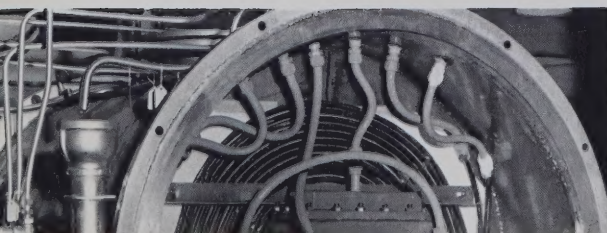
## 5. ORGANIZATION AND PERSONNEL

Policy Group established; a major division reorganized; executive appointments made; labor stoppages limited to one week at one plant.



## 6. FINANCIAL RECORD

Operations and balance sheet analyzed; audited statements of consolidated income, balance sheet and funds flow presented.



## 7. OUTLOOK

Moderate improvement in Free World economies predicted; opportunities for new products and new markets expected.

**THE CARBORUNDUM COMPANY**

Niagara Falls, New York

*Annual Report for the year ended December 31, 1964*

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William H. Wendel, President; Marjorie Mitchell, Secretary to the President.

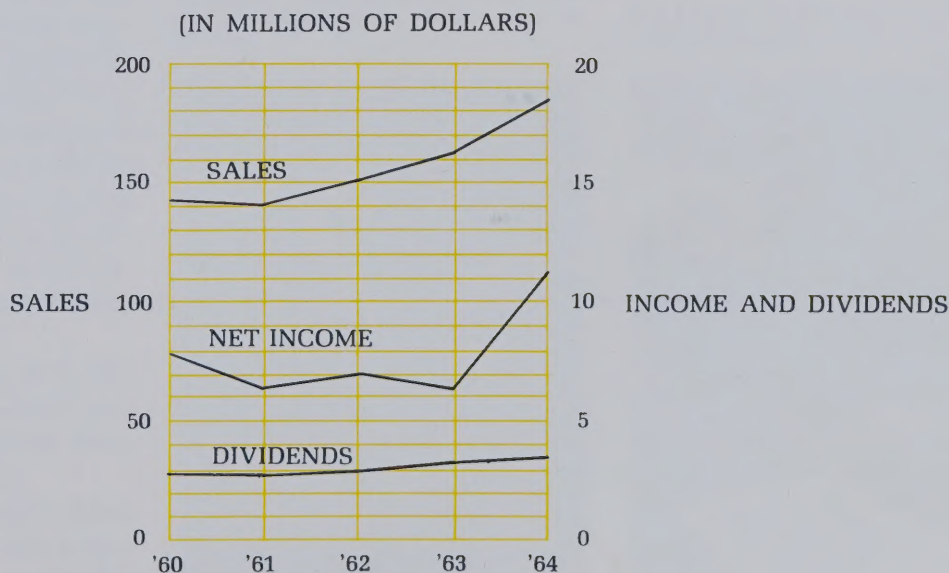
# Summary of Operations

Sales Reached Historic High of \$184,600,000; Net Income Rose to Record of \$11,200,000 or \$6.19 Per Share; Dividend Rate Increased 11%; Loans of \$7,800,000 Repaid.

## WORLDWIDE FINANCIAL FIGURES IN BRIEF

	1964	1963	% Increase
<b>Operating and Balance Sheet Data</b> (In Millions of Dollars)			
Sales	\$184.6	\$162.2	14%
After-Tax Income	11.2	6.4	77%
Total Assets	154.7	147.8	5%
Stockholders' Equity	109.7	101.2	8%
Dividends Paid	3.4	3.2	6%
Spent for Properties, Plants and Equipment	11.2	12.0	
Depreciation and Amortization	7.4	7.5	
Investments in Non-Consolidated Subsidiary and Associated Companies at Year End	\$ 4.2	\$ 4.0	
<b>Income Ratios</b>			
After-Tax Income as Percent of Sales	6.1%	3.9%	
Return on Stockholders' Equity	10.3%	6.3%	
<b>On a Per Common Share Basis</b>			
Shares Outstanding	1,816,187	1,801,837	
Earnings	\$ 6.19	\$ 3.53	
Dividends Paid	\$ 1.90	\$ 1.80	
Stockholders' Equity	\$60.39	\$56.19	

## Five Years Charted







Nic L. Knoph, President of Tysaman Machine Company, Inc., inspects progress on new plant and offices under construction in Knoxville, Tennessee. Completion date is May, 1965.



## Acquisitions and New Facilities

*Over \$11,000,000 Expended for Expansion and Modernization of Present Facilities and the Facilities of Newly Purchased Companies; Commitments Made for Further Acquisitions.*

### ACQUISITIONS

A Company objective for 1965 of acquiring at least one major domestic company in an area of business related to existing operations was achieved by...

#### **Purchase of Basic Carbon Corporation and Falls Industries Incorporated.**

On December 29, 1964 Carborundum completed one of its most important acquisitions when it paid about \$5 million in cash for Falls Industries Incorporated with a plant in Solon, Ohio, and Basic Carbon Corporation with new facilities in Sanborn, New York. The assets and liabilities but not the income of these two companies were consolidated at December 31, 1964.

Falls Industries and Basic Carbon manufacture and sell carbon and graphite products which are important in many chemical, metallurgical, electrical, missile and rocket applications. Basic Carbon also adds a new class of non-metallic fabrics and fibers to those of Carborundum which have established a strong position in high temperature and corrosion-resistant applications. These two new subsidiaries meet Carborundum's usual acquisition standards of manufacturing and technical competence, profitability and relevance to the Company's existing technical marketing capabilities.

Carborundum's interest in carbon and graphite goes back several years. It stems from three fundamental conditions:

The carbon and graphite business has been a growing one, exceeding the rate of growth

of gross national product. It is expected to grow at a faster rate in the future, particularly in the steel and chemical processing industries, both here and abroad.

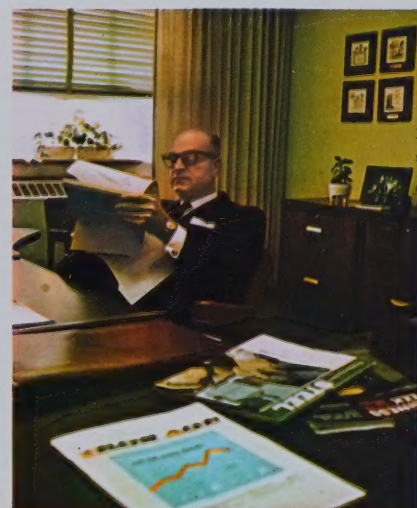
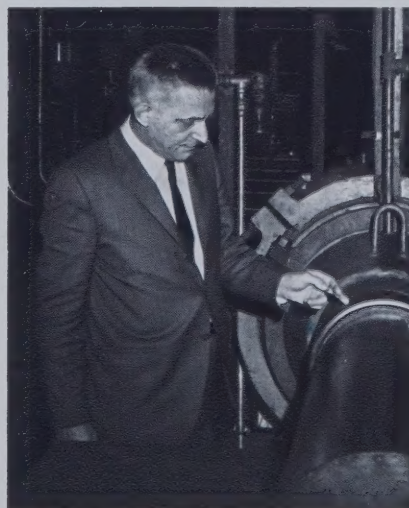
For the size of the industry, there are relatively few manufacturers, probably because of the highly technical competence and large capital investment required.

Most importantly, carbon and graphite products fit exceptionally well with Carborundum's product line. The inventor of silicon carbide and the founder of Carborundum, Dr. Edward

G. Acheson, was also the inventor of artificial graphite. The manufacturing processes, technology and application of silicon carbide and graphite are similar. The Company, its subsidiaries and associates are users of graphite and carbon.

Of equal significance to the existing business of these two companies is the fundamental technology they provide which will enable Carborundum, upon completion of a production unit in Hickman, Kentucky, to supply high quality graphite electrodes, anodes and mold stock substan-

A large diameter carbon rod is examined by Myron T. Cory, President of Basic Carbon Corporation, as it emerges from an extruder.



Roy J. Zook, President of Falls Industries Incorporated, Solon, Ohio.

Basic Carbon's production and research facilities occupy four modern buildings situated on a 42-acre tract in Sanborn, N. Y.

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Canada Sand Papers' expanded facilities for resin bond coated abrasives are inspected by G. E. Best, Vice President and General Manager and Herbert Goff, Maker Operator.



Large graphite heat exchangers for the chemical processing industry are produced by Falls Industries Incorporated. Other products include graphite-lined pumps, coolers, absorbers and valves.

tially sooner than would be possible otherwise.

#### **Expansion of Pangborn's Overseas Activities.**

At the time Carborundum acquired Pangborn, it was recognized that there were unexploited opportunities overseas. In spite of a worldwide reputation for its dust collection equipment and special industrial machinery, Pangborn's facilities were limited to the United States. Foreign business had been transacted through direct shipment, sales agents and licensees. In late 1964 significant commitments were made in Italy and France which will enable Pangborn to participate directly

in the European market. In Italy a contract was made to acquire 100% ownership of Fondermatica S.N.C., a machinery manufacturer and Pangborn licensee. In France the Company acquired the sales agency rights of Pangborn's former machinery licensee.

#### **Other Commitments.**

In Brazil arrangements were concluded in 1964 for Carborundum to purchase the remaining 50% outstanding stock of Eletro Metalurgica Abrasivos Salto S.A., a producer of crude silicon carbide and aluminum oxide.

In Japan the Company increased its minority ownership during the year in the Japanese heating ele-



ment manufacturer and Carborundum licensee, Tokai Konetsu Kogyo.

### NEW FACILITIES

The largest construction project in 1964 was a new distribution center in Chicago. This facility became fully operational during 1964, marking the second significant distribution expansion in as many years. Concurrently, the distribution center in St. Louis was discontinued, although sales offices were retained in that area.

At year end, construction of a new coated abrasives facility was underway in Germany; the foundations were poured for a new, larger plant of Tysaman Machine Company at Knoxville, Tennessee, which will be operational in mid-1965; United States manufacturing activities of all non-defense applications of "KT" silicon carbide were in the process of being transferred to new facilities in Puerto Rico.

Other projects meriting comment are:

- Modernization of the silicon carbide powder plant;

- Expansion of sintered abrasives facilities;

- Expansion of resin manufacturing activities;

- Expansion of the ceramic fiber plant;

- Construction of two Abrasive Service Centers, all at Niagara Falls, New York.

- Expansion of the facilities for production of "KT" silicon carbide suction box covers;

- Modernization of metallurgical additive facilities, both at Niagara Falls, Ontario.

- Conversion of a coated abrasive coating machine for the complete product line, at Plattsville, Ontario.

Construction of a new metallurgical additive plant, at Vancouver, Washington.

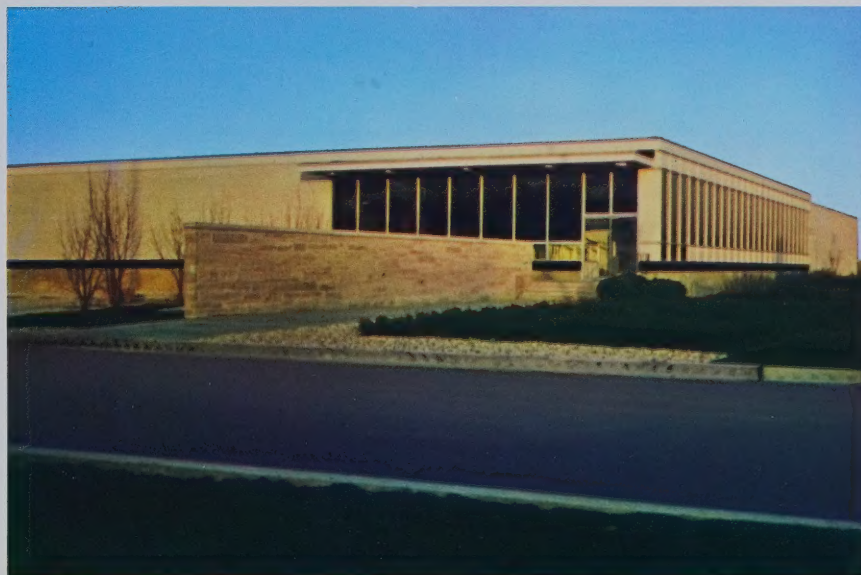
Move of the French diamond wheel facilities to a new plant site, at Paris.

For the past ten years the Company has used electronic data processing equipment extensively for automating its operating systems and developing modern management control techniques covering product lines which exceed 350,000 different items. Customer service has been improved and costs reduced. The existing facilities are now economically obsolete, and are rapidly becoming physically obsolete. The present equipment is being phased out and will be completely replaced by early 1966 with new equipment of much greater speed and capacity. Further reductions in operating costs are expected, and the scope of electronic data processing activities will again be expanded. With the growing use of

these techniques by business and industry, Carborundum is devoting major attention to development of services and systems linking its electronic computing and communications facilities with those of its distributors, customers and suppliers for improved service and operating efficiency.

To strengthen Carborundum's position in overseas markets, several notable projects were either begun or completed in 1964 by associated companies. These included near completion of a fused aluminum oxide plant by Carborundum Universal Limited, headquartered at Madras, India, and an increase in its bonded plant capacity; installation of additional coated making facilities and an extensive modernization and expansion of the bonded abrasives plant of Carborundum-Universal S.A. (Pty.) Limited, headquartered at Port Elizabeth, Republic of South Africa.

New Distribution Center, Berkeley, Illinois (Chicago).



**FACILITY LOCATIONS**

<i>The Company and Subsidiaries</i>	<i>Associates</i>	<i>Principal Overseas Licensees</i>
<b>Bonded Products</b>		
Niagara Falls, New York	Toluca, Mexico	Nagoya, Japan
Logan, Ohio		
Niagara Falls, Ontario	Buenos Aires, Argentina	
Mayaguez, Puerto Rico		
Manchester, England	Madras, India	
Paris, France	Port Elizabeth, Republic of South Africa	
Dusseldorf, Germany		
Vinhedo, Brazil	Sydney, Australia	
<b>Coated Products</b>		
Niagara Falls, New York	Madras, India	Nagoya, Japan
Plattsville, Ontario		
Staffordshire, England	Springs, Transvaal, Republic of South Africa	
Accrington, England		
Dusseldorf, Germany		
Vinhedo, Brazil		
Melbourne, Australia		
<b>Raw Material Manufacturing Facilities</b> (Silicon Carbide and Aluminum Oxide)		
Niagara Falls, New York	Hautes-Pyrenees, France	Vadillos, Spain
Vancouver, Washington		Mondragon, Spain
Niagara Falls, Ontario	Salto, Brazil	
Shawinigan, Quebec		Shiogiri, Japan
Padiham, England	Cochin, India	
Eydehavn, Norway		
<b>Refractory Products</b>		
Niagara Falls, New York	Falconer, New York	Vadillos, Spain
Perth Amboy, New Jersey		
Rainford, England	Madras, India	Tokyo, Japan
	Port Elizabeth, Republic of South Africa	Mayfield, Australia
<b>Heating Elements and Electronic Products</b>		
Niagara Falls, New York		Tokyo, Japan
Latrobe, Pennsylvania		



*The Company  
and Subsidiaries*

*Associates*

*Principal Overseas Licensees*

**Machinery and Related Products**

Niagara Falls, New York  
Hagerstown, Maryland  
Butler, Pennsylvania  
Knoxville, Tennessee

Birmingham, England  
Corsham, England  
Wakefield, England  
Paris, France  
Milan, Italy  
Stockholm, Sweden

Osaka, Japan

Sydney, Australia

**Metal Products**

Akron, New York  
Parkersburg, West Virginia

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**“KT” Silicon Carbide**

Niagara Falls, New York  
Niagara Falls, Ontario  
Mayaguez, Puerto Rico

**Tripoli**

Seneca, Missouri

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**Cutting Tools**

Mayaguez, Puerto Rico

**Carbon and Graphite Products**

Solon, Ohio  
Sanborn, New York

**5**

**MARKETING ORGANIZATIONS**

Montpelier, Vermont  
Los Angeles, California  
Toronto, Ontario

Pittsburgh, Pennsylvania

Kitwe, Zambia

Brussels, Belgium  
Manchester, England  
Paris, France  
Milan, Italy  
Oslo, Norway  
Geneva, Switzerland  
Rotterdam, The Netherlands

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"Hot Grinding"—one of several new concepts for stock removal for the steel industry. This new method was unveiled to the industry at Steel Conferences in Niagara Falls, Pittsburgh and Chicago.



## Technical and Marketing Developments

*Carborundum's New Abrasive Systems Accorded Enthusiastic Reception; New Abrasive Systems Centers Established; Multiple Products Supplied for Multiple Markets; Advanced Refractory Materials Received Strong Acceptance; Silicon Carbide Fibers Made Commercially Available; Company and Subsidiary Cited in National Research Competition for Two New Developments.*

The cycle which has run through Carborundum's history of market research, product research, development, marketing and more research dominated the Company's technical and marketing developments in 1964. Examples of a blending of technical and marketing capabilities to provide better solutions to major industrial market requirements are . . .

### **Abrasive Systems**

Carborundum has gone far beyond supplying only one product — abrasives — to meet customers' stock removal needs. The Company now solves material removal problems by supplying total abrasive systems which include the concept, the machinery and the abrasives. This ability was demonstrated last Fall in a series of conferences when executives of the steel industry received their first full review of the new abrasive systems processes for hot grinding, hot cut-off, arborless grinding and large diameter abrasive cutting.

These systems were greeted by the technical press and steel industry representatives as meeting

current needs, and as possible solutions to conditioning problems in the industry's drive toward continuous processing. Each of the systems offers impressive economic and technical advantages. Hot grinding approximately doubles the rate of metal conditioning, and decreases the power requirements and abrasive consumption per ton of steel removed. Grinding wheels without a center arbor hole are capable of 25% greater speeds.

### **Abrasive Systems Centers**

Two new permanent facilities were established in Niagara Falls, New York to continue demonstrations of the abrasive systems concept. The first, incorporating products of Tysaman Machine Company and Bonded Abrasives Division was utilized initially for the introduction of hot grinding and the arborless wheel tests. The second demonstrates belt machinery, contact wheels and abrasive belts manufactured by the Coated Abrasives Division. Pangborn was already equipped with similar service facilities in Hagerstown, Maryland, utilizing



New Carborundum products and machines were displayed in this exhibit at the Steel Conferences in September and October.



Tysaman Cut-Off Machine will cut bar or slab stock either hot or cold using a 48" diameter cut-off wheel



the products of Pangborn and the Electro Minerals Division.

#### **Multiple Products for Multiple Markets**

Pangborn introduced new angled-vein Roto-blast machines for greater efficiency in metal finishing, and new high-efficiency abrasive separator equipment for foundry blast cleaning.

The Bonded Abrasives Division launched a highly successful line of "Black Magic" diamond wheels for carbide tool grinding.

The Electro Minerals Division advanced the sale of "Carborod"

ics Division introduced "Lo-Con" Fiberfrax blankets whose heat insulating qualities provide savings of one-third in installation costs, and Mullfrax which is used in a variety of high temperature and corrosion resistant applications from linings for ceramic furnaces to troughs for passing molten metal.

Carborundum thermistors capable of doubling the electrical current capacity and varistors with superior voltage characteristics have made possible an automatic demagnetizing circuit used to lower costs to consumers



Demonstrating the Tysaman Mark 100-60 Slab Grinder to a group of customers in an Abrasive Systems Center, Niagara Falls.

abrasive grain, an extruded sintered material for grinding wheels used in heavy stock removal.

The Coated Abrasives Division introduced a cup-resistant belt paper for furniture sanding and "Super Dry-Lube", a superior type of finishing paper used in the furniture and automotive industries.

The Refractories and Electron-

ics Division introduced "Lo-Con" Fiberfrax blankets whose heat insulating qualities provide savings of one-third in installation costs, and Mullfrax which is used in a variety of high temperature and corrosion resistant applications from linings for ceramic furnaces to troughs for passing molten metal.

#### **Advanced Refractory Materials**

The Refractories and Electronics Division introduced to the ceramics industry dramatically improved "Life Line" kiln furniture. In exhaustive laboratory and field tests, "Life Line" products proved stronger and lasted longer with



Parked near the Pittsburgh Hilton at the city's busiest corner, Carborundum's trailer "billboard" was seen by thousands.



Processed Silicon Carbide whisker magnified about 150 times.



resultant cost savings to the customer. The improvement is due to its uniform high density; the result is consumer demand which has sparked a plant expansion.

The Company identified and supplied forty new cost saving applications of its refractory products in the steel industry where resistance to wear, corrosion and temperature is critical.

#### Silicon Carbide Fibers

During the year development work progressed so satisfactorily on silicon carbide fibers that their commercial availability was announced early in 1965. Because these fibers are single crystals they have extraordinarily high strengths, as great as 2 million pounds per square inch. Sometimes known as whiskers, they resist temperatures far in excess of any commercial fibers. Because they absorb infra-red radiation, they may find application in either exceptionally high temperature or cryogenic insulation. Re-

search is underway to form them into mats or paper sheets for incorporation into reinforced plastics, metals and possibly ceramics. By offering them for sale in pound quantities rather than in grams, a ratio of 450 to 1, it is hoped that customers will also conduct research that will take these products out of the laboratory into the plant.

#### Research Awards

The Company's single crystal silicon carbide thermistor was selected by *Industrial Research* magazine as one of the 100 most significant new products of 1964. This device provides great accuracy and stability in temperature sensing. The same honor was accorded to our subsidiary, Basic Carbon Corporation, for "Carb-I-Tex" graphite cloth which improves the reliability and performance of aerospace components. Both companies were similarly honored in 1963.

For the second consecutive year, products developed by The Carborundum Company and by Basic Carbon Corporation were judged by *Industrial Research* magazine to be among the year's 100 most significant new technical products. Right, Donald G. Sturges, Vice President, Research and Development, accepts one of the 1964 Awards.



**PRINCIPAL PRODUCTS**

**Abrasives**

Bonded Products (grinding wheels, diamond wheels)	All types of abrasive applications and products for filtration and aeration
Coated Products (rolls, sheets, discs, belts)	All types of abrasive applications
Silicon Carbide and Aluminum Oxide Grains and Powders	Some abrasive markets; utilized in the manufacture of coated and bonded abrasives, refractories and wear-resistant products. Some non-abrasive markets; metallurgical, chemical and electrical

**Refractories**

Bonded Refractories	Specialized refractory shapes for use by industry generally
Ceramic Fiber	A flexible ceramic fiber with high temperature resistance and outstanding insulating qualities

**Electronics**

Electronic Products	Custom designed components and electronic devices
Heating Elements	High temperature electric heating elements for industrial furnace usage

**Machinery and Related Products**

Pangborn Industrial Machines	Airless and pressure abrading, descaling and shot peening machines for the metal industries, particularly foundries, steel mills and automotive industries; vibratory finishing machines for general metalworking applications; steel shot and grit
Pangborn Dust Collection Equipment	Non-electrostatic dust collecting equipment for general industrial applications
Tysaman Machines	Sawing, grinding and polishing equipment for the stone industry; billet grinders, cut-off equipment and special machinery for the metal industries
Carborundum Machines	A line of machines which utilize coated abrasive belts for grinding and finishing metallic and non-metallic materials



## Other Products

Metals	Hafnium and Zirconium metals used primarily in nuclear reactors but finding acceptance in other fields because of their high corrosion resistance
Dense Silicon Carbide	A self-bonded silicon carbide currently used in suction box covers on Fourdrinier paper-making machines; rapidly finding acceptance where a wear-resistant material is needed
Tripoli	A highly absorbent natural silica used in buffing and polishing
Cutting Tools	Ceramic material used as cutting inserts in turning and boring machines
Carbon and Graphite Products	Carbon and graphite based materials fabricated in the form of heat exchangers and other chemical equipment components or parts; specialized cloth or fibers and very high density graphite used in high temperature applications such as rocket nozzles and rocket nozzle inserts
Silicon Carbide Whiskers	Very high strength single crystal fibers expected to be useful in making high strength composites with plastics, metals and ceramics
Silicon Carbide Briquettes	A metallurgical additive for the steel and ferrous foundry industries

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## CARBORUNDUM AROUND THE WORLD





*Foreign Subsidiaries Showed Gains; German Subsidiary Changed 1963 Loss to 1964 Profit; Company and a Subsidiary Cited for Excellence in Export from United States; Associated Companies Set Records.*



Leon A. Patt, Group Vice President, International Operations.

Foreign activities were at a high level. Business conditions were generally favorable. Direct exports from North American companies and from overseas manufacturing units contributed significantly to the year's results.

Overseas operations continued to grow, and contributed about one-third of Company sales and income for the year. A major contributor was the German subsidiary, where a turnaround in profitability changed a loss in 1963 to a gain in 1964.

Export efforts from the United States were rewarded when the Company and Tysaman Machine Company of Knoxville, Tennessee, were simultaneously presented with "E" Awards for Excellence in Export by the United

States Department of Commerce. This was the first time that "E" Awards were so given to a company and its subsidiary.

Sales and earnings of the non-consolidated subsidiary and associated companies expressed both in local currencies and United States dollars were good. On the basis of Carborundum's participation in the ownership of these companies, its share of the sales amounted to the equivalent of approximately \$14.7 million, and its share of the earnings to about \$750,000 after taxes, which are not included in the income statement. Technical fees and dividends taken into income in 1964 from these companies amounted to \$285,000.



A meeting of the Board of Directors.



## Organization and Personnel

*Policy Group Established; A Major Division Reorganized; Executive Appointments Made; Labor Stoppages Limited to One Week at One Plant.*

To assure orderly planning, identify problem areas, exploit opportunities and review Company objectives, a Policy Group of six members was established in 1963. This group includes the President, the three Group Vice Presidents, and the Vice Presidents in charge of Research and Development and Finance. The Policy Group, meeting regularly with division and subsidiary managers, has contributed significantly to the progress recorded by the Company in 1964.

The Refractories and Electronics Division consists of four plants with varied products and markets. Previously, much of the headquarters sales and technical responsibilities were vested with plant managers. Changes were made in 1964 to stress function rather than products, providing greater flexibility and centralized control.

In a continuing effort to strengthen executive management, a number of changes were made during the year. Mr. Alan Wolfley joined Carborundum and was elected Vice President, Finance. Mr. Wolfley's background includes fifteen years of diversified financial experience in the United States and abroad. Mr. John A. Williamson, currently serving in the dual capacity of Chairman of the Board of The Carborundum Company Limited and European Area Director, was elected a Vice President of the parent company. Mr. Williamson has been with the Company for 36 years. Mr. Robert W. Lear, formerly Vice President, Marketing, was promoted to Group Vice President, and will be responsible for the activities of the



Robert W. Lear, Group Vice President and John A. Williamson, Vice President and European Area Director, review an advertisement from the series which will appear in *Fortune* magazine during 1965.

Refractories and Electronics Division and the newly-acquired carbon and graphite companies, Falls Industries and Basic Carbon. The products in this Group constitute a family of materials resistant to various phenomena: heat, electricity, corrosion, abrasion, friction and nuclear radiation. Mr. Ralph M. Trent, who as President of Pangborn was directly responsible for its recent growth, retired on December 31, 1964 after 35 years of service. He will serve as a Consultant to Carborundum and Pangborn. Mr. James R. McConnell, Executive Vice President of Pangborn, is now chief executive officer of that company.

Alan Wolfley, Vice President, Finance.



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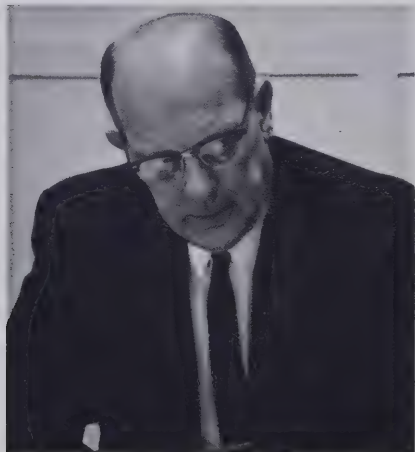
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As evidence of amicable labor relations, work stoppages were limited to approximately one week at one plant, involving 320 people.

Annual Reports over the years have emphasized the fact that Carborundum's personnel throughout the Free World are its most important asset. The fine results of 1964 would not have been possible without good employee relations, dedication and hard work of its 11,000 employees.



Niles C. Bartholomew, Vice President, Corporate Planning.



John F. Claydon,  
Group Vice President, Abrasives.



Arden M. MacDonald,  
Vice President and General Manager,  
Electro Minerals Division.



Edward A. Montgomery, Vice President,  
Secretary and General Counsel.



William J. Ehlers, Vice President,  
Personnel.



#### BOARD OF DIRECTORS

**Thomas H. Beddall, Jr.**  
Governor and Vice President,  
T. Mellon and Sons

**Charles H. Diefendorf**  
Director and Honorary Chairman  
of the Board,  
Marine Midland Corporation

**Clifford C. Furnas**  
President,  
State University of New York  
at Buffalo

**Willard F. McCormick**  
Senior Partner,  
Cresap, McCormick and Paget

**Leon A. Patt**  
Group Vice President,  
The Carborundum Company

**Nathan W. Pearson**  
Governor and Vice President,  
T. Mellon and Sons

**Clarence D. Shepard**  
Chairman of the Board,  
The British American Oil  
Company, Limited

**William H. Wendel**  
President,  
The Carborundum Company

#### INDEPENDENT ACCOUNTANTS

Price Waterhouse & Co.

#### TRANSFER AGENT

The Chase Manhattan Bank,  
New York

#### REGISTRAR

First National City Bank, New York

#### OFFICERS

**William H. Wendel**  
President

**Leon A. Patt**  
Group Vice President,  
International Operations

**John F. Claydon**  
Group Vice President, Abrasives

**Robert W. Lear**  
Group Vice President,  
Resistant Materials

**Donald G. Sturges**  
Vice President,  
Research and Development

**Alan Wolfley**  
Vice President, Finance

**Niles C. Bartholomew**  
Vice President,  
Corporate Planning

**William J. Ehlers**  
Vice President, Personnel

**Edward A. Montgomery**  
Vice President, Secretary  
and General Counsel

**Arden M. MacDonald**  
Vice President and General  
Manager,  
Electro Minerals Division

**John A. Williamson**  
Vice President and  
European Area Director

**Arthur A. Turner**  
Vice President

**Gilbert J. Stewart**  
Treasurer

FIVE YEAR COMPARISON

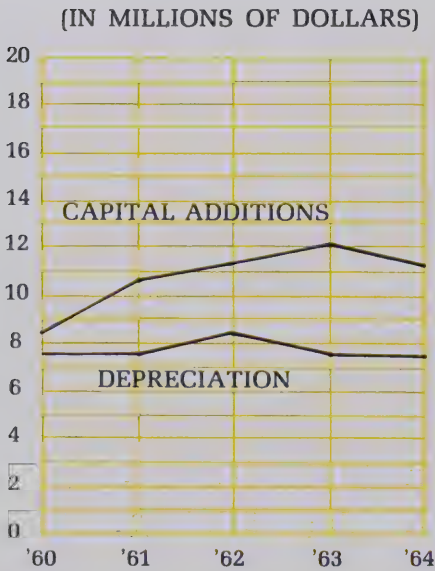
SELECTED OPERATING AND BALANCE SHEET DATA (in Millions of Dollars)

	1964	1963	1962	1961	1960
Sales	\$184.6	\$162.2	\$150.3	\$141.2	\$142.6
Pre-Tax Income	22.3	13.8	13.9	12.9	16.1
After-Tax Income	11.2	6.4	7.0	6.3	7.6
Current Assets	86.7	82.6	76.4	77.3	75.1
Current Liabilities	29.6	27.3	22.4	22.6	20.2
Working Capital	57.1	55.3	54.0	54.7	54.9
Stockholders' Equity	109.7	101.2	97.9	93.4	89.2
Dividends Paid	3.4	3.2	2.9	2.8	2.8
Spent for Properties, Plants and Equipment	11.2	12.0	11.2	10.6	8.2
Depreciation and Amortization	\$ 7.4	\$ 7.5	\$ 8.3	\$ 7.4	\$ 7.4

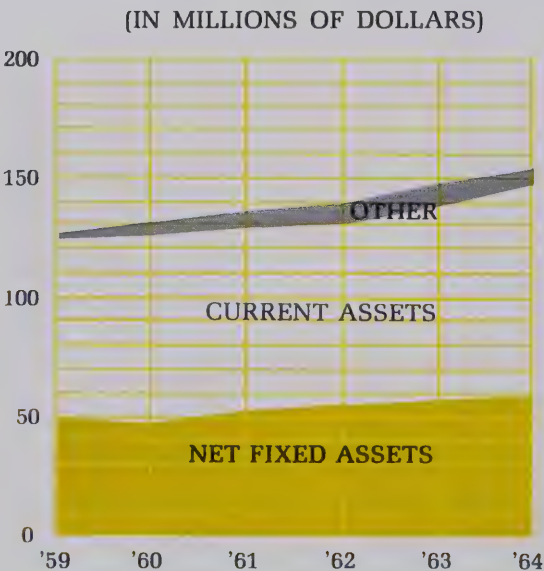
SELECTED OTHER DATA

After-Tax Income as a Percent of Sales	6.1%	3.9%	4.7%	4.5%	5.3%
Return on Stockholders' Equity	10.3%	6.3%	7.2%	6.8%	8.5%
Earnings Per Share	\$ 6.19	\$ 3.53	\$ 3.91	\$ 3.54	\$ 4.31
Dividends Per Share	\$ 1.90	\$ 1.80	\$ 1.60	\$ 1.60	\$ 1.60
Stockholders' Equity Per Share	\$60.39	\$56.19	\$54.55	\$52.32	\$50.56

Over the five years capital additions exceeded depreciation by \$15.2 million



Over the five years total assets increased by 25%





## Financial Record

*Operations and Balance Sheet Analyzed; Audited Statements of Consolidated Income, Balance Sheet and Funds Flow Presented.*

All-time sales and after-tax income records were established in 1964. After-tax income of \$11,249,000 or \$6.19 per share on the 1,816,187 common shares outstanding at December 31 represented an increase of 77% over 1963, when \$6,361,000 in after-tax income, equal to \$3.53 per share on 1,801,837 common shares, was earned. The 2% reduction in the United States corporate tax rate added \$0.18 per share to 1964 income. Sales of \$184,617,000 were up 14% over last year, with all principal divisions and subsidiaries participating in the worldwide increase.

The financial condition of the Company remained strong. Funds generated from operations adequately covered the \$1.90 in dividends per common share paid in 1964, and made possible the purchase of Falls Industries and Basic Carbon without outside borrowing.

Very close control of administrative expense was exercised, and contributed substantially to the improved results.

Inventories, exclusive of those of Basic Carbon and Falls Industries acquired at year end, rose only \$323,000 although sales increased over \$22,000,000.

In addition to the statements of consolidated income and balance sheet, a statement of funds flow is presented.

## STATEMENT OF CONSOLIDATED INCOME

	Year Ended December 31			
	1964		1963	
	Amount	Percent	Amount	Percent
Net sales	\$184,617,000	100.0%	\$162,203,000	100.0%
Cost of products sold	113,554,000	61.5	101,836,000	62.8
Gross margin	<u>\$ 71,063,000</u>	<u>38.5</u>	<u>\$ 60,367,000</u>	<u>37.2</u>
Selling, administrative and general expenses	49,021,000	26.6	46,252,000	28.5
Operating income	<u>\$ 22,042,000</u>	<u>11.9</u>	<u>\$ 14,115,000</u>	<u>8.7</u>
Other income and (expense)				
Interest and other income	\$ 1,397,000	0.8	\$ 735,000	0.5
Interest expense	(824,000)	(0.4)	(890,000)	(0.6)
Foreign exchange adjustments	(296,000)	(0.2)	(126,000)	(0.1)
Total other income and (expense)	<u>\$ 277,000</u>	<u>0.2</u>	<u>\$ (281,000)</u>	<u>(0.2)</u>
Income before taxes on income	<u>\$ 22,319,000</u>	<u>12.1</u>	<u>\$ 13,834,000</u>	<u>8.5</u>
Taxes on income	11,070,000	6.0	7,473,000	4.6
Net income	<u>\$ 11,249,000</u>	<u>6.1%</u>	<u>\$ 6,361,000</u>	<u>3.9%</u>
Net income per share	\$ 6.19		\$ 3.53	
Dividends per share	\$ 1.90		\$ 1.80	

## STATEMENT OF CONSOLIDATED INCOME REINVESTED IN THE BUSINESS

Income reinvested in the business at beginning of year	\$ 72,885,000	\$ 69,765,000
Net income	<u>11,249,000</u>	<u>6,361,000</u>
	<u>\$ 84,134,000</u>	<u>\$ 76,126,000</u>
Dividends on common stock paid in cash	3,442,000	3,241,000
Income reinvested in the business at end of year	<u>\$ 80,692,000</u>	<u>\$ 72,885,000</u>



# CONSOLIDATED BALANCE SHEET

	December 31	
	1964	1963
<b>ASSETS</b>		
<b>Current Assets</b>		
Cash, including time deposits of \$7,872,000 and \$4,932,000 respectively	\$ 15,150,000	\$ 13,856,000
Government securities at cost and accrued interest, which approximates market	1,239,000	4,142,000
Accounts receivable, less allowance for losses	27,920,000	23,308,000
Inventories (Note 2)	41,839,000	40,743,000
Prepayments, principally insurance and taxes	569,000	587,000
Total Current Assets	<u>\$ 86,717,000</u>	<u>\$ 82,636,000</u>
<b>Investments and Other Assets</b>		
Investments and advances—non-consolidated subsidiary and associated companies (Note 3)	\$ 5,586,000	\$ 5,738,000
Sundry investments and other assets (Note 4)	3,035,000	3,269,000
Total Investments and Other Assets	<u>\$ 8,621,000</u>	<u>\$ 9,007,000</u>
<b>Properties, Plants and Equipment (Note 5)</b>	<u>\$ 59,332,000</u>	<u>\$ 56,154,000</u>
<b>TOTAL ASSETS</b>	<u>\$154,670,000</u>	<u>\$147,797,000</u>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
<b>Current Liabilities</b>		
Notes payable to banks	\$ 1,000,000	\$ 2,800,000
Current portion of long-term debt	1,000,000	2,800,000
Accounts payable and other liabilities	16,585,000	13,944,000
Taxes on income	11,046,000	7,766,000
Total Current Liabilities	<u>\$ 29,631,000</u>	<u>\$ 27,310,000</u>
<b>Long-Term Debt and Other Liabilities</b>		
Long-term note payable (Note 6)	\$ 13,000,000	\$ 17,200,000
Other long-term liabilities (Note 7)	2,355,000	2,043,000
Total Long-Term Debt and Other Liabilities	<u>\$ 15,355,000</u>	<u>\$ 19,243,000</u>
<b>Stockholders' Equity (Note 8)</b>		
Preferred Stock, par value \$100 a share 100,000 shares authorized but unissued	0	0
Common Stock, par value \$5 a share Authorized 2,500,000 shares; issued 1,831,262 shares at December 31, 1964	\$ 12,208,000	\$ 12,113,000
Capital in excess of stated amount	17,379,000	16,841,000
Income reinvested in the business	80,692,000	72,885,000
	<u>\$110,279,000</u>	<u>\$101,839,000</u>
Less—Common Stock held in treasury, at cost—15,075 shares	595,000	595,000
Total Stockholders' Equity	<u>\$109,684,000</u>	<u>\$101,244,000</u>
<b>TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY</b>	<u>\$154,670,000</u>	<u>\$147,797,000</u>

# CONSOLIDATED STATEMENT OF FUNDS FLOW

(In Millions of Dollars)

		Year Ended December 31			
	1964	1963	1962	1961	1960
<b>Funds available at beginning of year</b>					
Cash	\$13.9	\$11.1	\$ 8.6	\$ 7.5	\$ 6.4
Government securities	4.1	5.8	13.9	16.6	19.2
Total	<u>\$18.0</u>	<u>\$16.9</u>	<u>\$22.5</u>	<u>\$24.1</u>	<u>\$25.6</u>
<b>Funds provided</b>					
Income before depreciation and income taxes	\$29.7	\$21.3	\$22.2	\$20.3	\$23.5
Sale of fixed assets	0.7	1.0	0.5	0.3	1.9
Sale of common stock under option plan	0.6	0.2	0.4	0.7	0.4
Increase in					
Outside borrowings	—	5.1	—	0.5	—
Other long-term liabilities	0.3	0.2	0.2	0.1	0.2
Other current liabilities	5.9	0.6	—	2.1	—
Decrease in					
Receivables	—	—	—	1.2	—
Other assets	0.4	0.5	—	—	—
Total	<u>\$37.6</u>	<u>\$28.9</u>	<u>\$23.3</u>	<u>\$25.2</u>	<u>\$26.0</u>
<b>Funds expended</b>					
Spent for properties, plants and equipment	\$11.2	\$12.0	\$11.2	\$10.6	\$ 8.2
Income taxes	11.1	7.5	6.9	6.6	8.5
Dividends	3.4	3.2	2.9	2.8	2.8
Increase in					
Inventories	1.1	1.8	2.8	4.9	2.3
Receivables	4.6	3.3	1.9	—	1.4
Other assets	—	—	2.2	1.9	3.3
Decrease in					
Outside borrowings	7.8	—	0.8	—	1.0
Other current liabilities	—	—	0.2	—	—
Total	<u>\$39.2</u>	<u>\$27.8</u>	<u>\$28.9</u>	<u>\$26.8</u>	<u>\$27.5</u>
<b>Funds available at end of year</b>					
Cash	\$15.2	\$13.9	\$11.1	\$ 8.6	\$ 7.5
Government securities	1.2	4.1	5.8	13.9	16.6
Total	<u>\$16.4</u>	<u>\$18.0</u>	<u>\$16.9</u>	<u>\$22.5</u>	<u>\$24.1</u>



## Notes to the Financial Statements

### 1. Consolidation

The consolidated statements include all majority-owned subsidiaries except a subsidiary in Brazil which is excluded because of unsettled economic conditions and currency exchange restrictions. Net assets of approximately \$33,700,000 were outside of North America. Properties, plants and equipment and depreciation accounts have been translated to U. S. dollars based upon rates of exchange prevailing when the assets were acquired. Other accounts were translated generally at exchange rates prevailing at the end of the year.

### 2. Inventories

The inventories are stated at the lower of cost or market. Cost of inventories aggregating \$16,444,000 was determined by the last-in, first-out (Lifo) method of accounting and the balance of the inventories is stated at average cost.

### 3. Investments and Advances—Non-Consolidated Subsidiary and Associated Companies

Investments are carried at cost, \$4,196,000, which compares with equity in their net assets of approximately \$7,164,000 at December 31, 1964.

### 4. Sundry Investments and Other Assets

Sundry investments and other assets are comprised principally of patents, trademarks, deposits and investments in foreign licensees.

### 5. Properties, Plants and Equipment, at Cost

	1964	1963
Land and mineral rights,		
less amortization	\$ 2,488,000	\$ 1,809,000
Buildings	49,034,000	46,447,000
Machinery and equipment	90,873,000	85,973,000
Construction in progress	4,317,000	3,175,000
	<u>\$146,712,000</u>	<u>\$137,404,000</u>
Less—depreciation and		
amortization	87,380,000	81,250,000
	<u>\$ 59,332,000</u>	<u>\$ 56,154,000</u>

Depreciation and amortization charged to income was \$7,360,000 in 1964 and \$7,490,000 in 1963.

### 6. Long-Term Note Payable

At December 31, 1964, \$14,000,000 was owing to an insurance company on a note payable in the years 1965-

1976 with interest at 4½% per annum. The portion of the note payable in 1965, \$1,000,000, is included in current liabilities.

### 7. Other Long-Term Liabilities

Other long-term liabilities include principally liabilities of foreign subsidiaries for pensions and taxes not currently payable.

### 8. Stockholders' Equity

At December 31, 1964, certain key executives held options to purchase 10,450 shares of common stock in the years 1965 to 1969 at prices ranging from \$45 to \$66 per share. In addition, 7,334 unoptioned shares were available for granting options. During 1964, options were granted to purchase 6,500 shares at prices ranging from \$45 to \$66 a share, options for 8,780 shares expired and options were exercised for 14,350 shares. Of the total consideration received, \$95,000 was added to common stock and \$538,000 to capital in excess of stated amount. Under the provisions of the insurance company loan agreement, \$18,869,000 of consolidated income reinvested in the business at December 31, 1964 was unrestricted as to payment of cash dividends. Reinvested income includes amounts capitalized or transferred to statutory reserves by certain foreign subsidiaries.

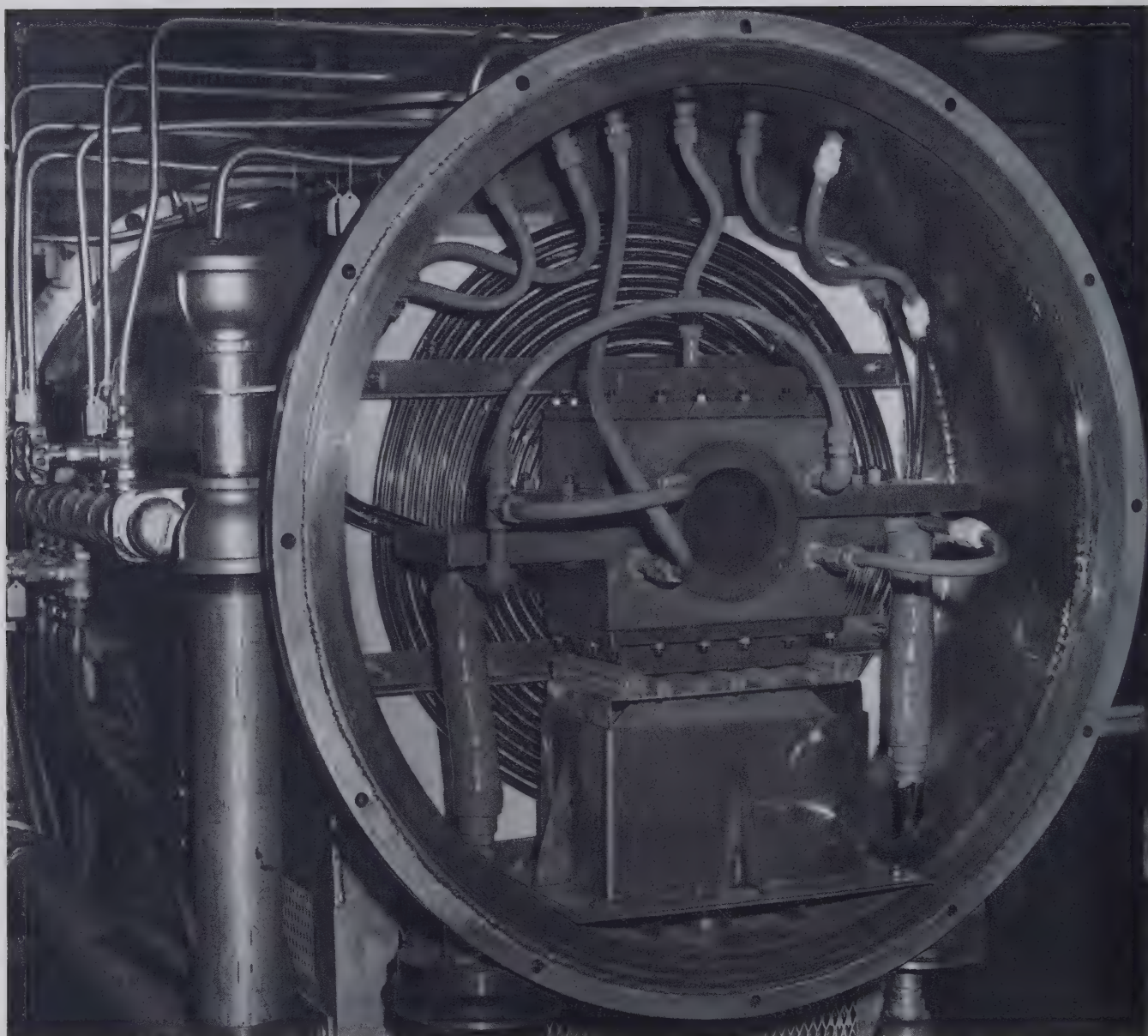
### Opinion of Independent Accountants

#### TO THE STOCKHOLDERS OF THE CARBORUNDUM COMPANY:

In our opinion, the accompanying consolidated balance sheet and the related consolidated statements of income, income reinvested in the business, and funds flow present fairly the financial position of The Carborundum Company and its subsidiaries at December 31, 1964, the results of their operations and the supplementary information on funds flow for the year, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year. Our examination of these statements was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

PRICE WATERHOUSE & CO.

Buffalo, New York  
February 15, 1965



This vacuum crystal-growing furnace achieves "ultra" purity plus reproducibility of  $\pm 10^\circ$  at temperatures up to  $2700^\circ\text{C}$ .



### *Moderate Improvement in Free World Economies Predicted; Opportunities for New Products and New Markets Expected.*

The economic climate in which the Company will operate in 1965 is likely to remain generally favorable. In spite of increasing disagreements among the nations of the Free World, progress in economic integration of major geographical areas, such as the European Economic Community and the European and Latin American Free Trade Associations, is almost certain to continue at a rapid pace. Balance of payment problems continue to plague major nations, but the cooperative and quick response of the larger trading countries to the decline of the British pound last fall was heartening. Whether a further crisis will develop remains to be seen.

In the United States the prospects are bright with the exception of possible work stoppages in major industries.

Within this climate, the Company is expected to prosper through internal and external developments in areas of enterprise that the Company fully understands. While not detracting from

the further opportunities in abrasives, particularly through the abrasive systems approach, greater growth is likely in other product areas serving new markets. Interestingly, many of these products stem from the same fundamental technology as abrasives. "KT" silicon carbide suction box covers, boron carbide, boron nitride, temperature sensing devices, non-metallic fibers, carbon, graphite, and a new product since year end, silicon carbide whiskers, a single crystal fiber, are examples.

As evidence of its confidence in the future, the Company's 1965 capital expenditures, including the commitments made in 1964 mentioned earlier in this report, will continue at a high level.

For the Board of Directors,



William H. Wendel  
President

February 15, 1965





**Back Cover:** Carborundum's new product advances, technological developments and marketing concepts received a high degree of editorial interest in the business press in 1964. Carborundum was featured on the covers of many of the business and trade magazines, some of which are shown here.

